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# Forest Certification in North America

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**f**orest certification—or, as it is sometimes called, green certification—aims to identify forestland that is managed to meet agreed-upon standards and, sometimes, to label products originating from those forests. The underlying goal of forest certification is to promote forest practices that are environmentally, socially, and economically sustainable over the long term. However, because of disagreement and uncertainty about the meaning of sustainability, most certification systems make more modest claims.

Certification of public and private forests is an issue that goes beyond our local forests and even beyond the confines of North America. It's a major topic of discussion in forestry worldwide, and perspectives vary widely. Environmental nongovernmental organizations (ENGOS) see it as a way to verify a landowner's or firm's commitment to sustainable forestry. Industrial forest companies and some government agencies

hope to use their certification to gain the public's recognition of the quality of their forest management. Wood products companies hope to capture new markets and gain market advantage by communicating their good environmental performance through using eco-labels to identify wood products coming from their certified forests.

Whatever the reason, forest certification involves an "independent" verification that forests are being managed and products are being produced in ways that minimize, or avoid, harm to the natural forests and the human systems that they support.

Owing to the highly politicized and evolving claims as to what constitutes sustainable forestry, new certification systems are developing, and older ones are constantly adapting. Companies, landowner groups, ENGOS, and others are lining up behind their preferred systems. Only time will tell which systems survive and what form they take. Certification of some sort, however, arguably will be with us for some time to come.

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*Chain of custody  
Ability to track  
wood from the  
time it leaves  
the forest through  
the processing  
and marketing  
channels, in order  
to ensure that  
what is labeled as  
a certified product  
can be traced  
back to a certified  
source.*

## **Worldwide growth and evolution**

Though development of most current certification systems can be traced back to the early 1990s, the idea of certifying and publicly advertising a well-managed forest in the United States goes back to 1941 when the American Tree Farm System was created. Tree Farm, now sponsored by the American Forest Foundation (AFF), was created to draw public attention to active management and investments being made in private forests. The original American Tree Farm certification program was based on a set of forest management principles and required an on-the-ground inspection of forest practices every 5 years. While these elements of the original Tree Farm system are echoed in the forest certification systems of today, newer systems evolved in a very different way.

The creation of the Forest Stewardship Council (FSC) in 1993 marked a new, global-scale step in the development of current-day forest certification. The FSC, spearheaded by the Worldwide Fund for Nature (WWF) and supported by other ENGOs, social activists, and select retailers and producers, was established to prevent forest deterioration globally. Many of the FSC founders were focused primarily, though not exclusively, on rapid deforestation of tropical forests. The FSC hoped that it could help tropical timber producers avoid environmental boycotts and meet demand from importing countries for environmentally sensitive wood products from well-managed forests.

During the early 1990s, the U.S.-based American Forest & Paper Association (AF&PA), an industry trade group, responded to the creation of the FSC by initiating their own certification system to address public concerns about forest sustainability. Transforming the Sustainable Forestry Initiative (SFI), which was originally an industry self-regulation program, the AF&PA added an optional third-party auditing component, whose policies and procedures are now formally housed in a body outside the auspices of the industry association.

Similarly, Canadian forest industry companies asked the Canadian Standards Association (CSA) to develop a sustainable forest management program. A 32-member, multi-interest technical committee established and coordinated by the CSA completed the standard in

1996; it was updated in 2002. The SFI recognizes the CSA system as the functional equivalent of the SFI system.

Nonindustrial private forest owners in the United States have additional options, though most remain undecided or noncommittal. A few are opting for the FSC system. More are involved through Tree Farm, which like the SFI was reworked to more closely reflect a modern forest certification system. The National Forestry Association (NFA) has developed a system, called Green Tag, for woodland owners, but it currently has limited scope.

Forest owners in Europe have created yet another alternative to the FSC. Originally known as the Pan European Forest Certification scheme (PEFC), in 2003 it was renamed the Programme for the Endorsement of Forest Certification schemes. It is currently the largest in the world in terms of certified area. As of December 2005, it included nearly 450 million acres of certified forestland in 20 countries. In March 2005, PEFC officially endorsed the CSA system, thereby allowing CSA-certified operators to use the PEFC label. Similarly, in December 2005, SFI received PEFC endorsement.

Trends outside forestry also have encouraged the creation of certification systems. Large corporations' move to standardize management systems led to the adoption, in 1994, of the International Organization for Standardization (ISO) 14001 Environmental Management Standard. While not specific to forestry, forestry operations can, and sometimes do, use its environmental management system framework as a foundation upon which to implement a forest management standard. Currently, the U.S. Forest Service is developing a certification system for national forests in the United States that is based loosely on the ISO process but also is being assessed for its conformity to SFI and FSC certification systems.

There are many examples of country-based certification systems. For example, Finland was an early entrant into certification when it created its own system and was one of the first such systems to be recognized by PEFC. Indonesia, Brazil, Malaysia, and many other countries also have created their own country-specific systems.

## **t**wo approaches to certification

Because the intent of certification is to verify good performance, a system's perceived objectivity and credibility are affected by who sets the performance standards and assessment procedures for the system. Under systems-based certification such as ISO 14001, the organization or individual seeking certification identifies its own environmental aspects and impacts, sets its own goals and targets, and devises an environmental management system to address them. This allows landowners to tailor the system to their own objectives and situation but does not demand that any particular performance level be attained.

Under performance-based systems, the certifying organization sets most or all performance criteria and oversees the assessment process to ensure conformance. The performance criteria specify certain actions or practices that are acceptable or unacceptable. For example, the use of herbicides or the size of clearcuts may be limited. In the case of the SFI and Tree Farm systems, many performance criteria point to a process that must be in place rather than a specific practice that must be evaluated.

Performance-based systems vary considerably in the degree of performance specified and in the types of criteria. Tree Farm, for example, has nine broad-based "standards," 14 performance measures, and 23 specific practice or process indicators. FSC and SFI require verified conformance with 50 or more specific practice or process indicators. System specifications for process or practice conformance can result in very different "on-the-ground" requirements. For example, many performance requirements often require initiating policies or processes but give limited direction about what on-the-ground practice might look like, leaving this up to the judgment of the assessment team.

Many people familiar with certification systems view FSC as designed and supported by several major international ENGOs. Tree Farm, PEFC, and SFI are considered more aligned with landowners and the forest industry. ISO and CSA are perceived to be somewhat different since they originated from within standards organizations. Standards organizations are designed to support industry and trade, and as a result these systems have been criticized by ENGOs.

### ***How credible is your claim? Developing an independent standard***

In a world filled with advertising claims, the assumption is that standards set internally are not as credible as ones set independently. Independence can be demonstrated by standards development and by the mechanism for assessing conformance with the standard. Certification systems attempt to gain credibility by independently setting standards and by being transparent to public view. Third-party assessment—i.e., independently verified performance—has become the standard approach for most certification systems.

Each system tends to take on the flavor of its primary constituents. The FSC is a "tripartite" form of governance in which environmental, social, and economic actors work together. The

*Eco-label  
Proprietary symbol used to identify a product that has been produced according to a given environmental standard.*





### Certification system

*A system of standards and third-party verification used to identify a well-managed forest.*

aim of this structure is to ensure that no one group can dominate policy making.

The SFI's standards are developed by the Sustainable Forestry Board, of which one-third are AF&PA members and two-thirds are nonmembers. Changes in the SFI Standard are the result of broad consultation and are widely circulated for public input. FSC selects regional committees which devise its specific indicators, then seek input from many outside stakeholders including environmentalists, landowners, industry, civic groups, state and federal agencies, and interested individuals. To be approved for use, the standard must be reviewed and adopted by the international FSC organization. ISO also has a public input process for standards development. CSA includes an extensive public review process for standards development and for review of certifications. Tree Farm standards are set internally by committees empowered by the certifying organization, with review by outside stakeholders.

A number of studies have examined the differences between SFI and FSC standards. These studies generally have found many similarities, some important differences, and, interestingly, that competition among systems over time has made them more similar.

An Oregon State University study, released in December 2001, compared the SFI and FSC systems with Oregon's extensive legal forestry practices code. FSC had extensive requirements regarding management plans, social criteria, and restoring natural systems, while SFI included more significant detail about training, visual management, and communication. For the timber-rich Pacific Coast region, FSC rules were much more prescriptive than SFI on issues such as use of chemicals, clearcutting, and maintenance of old forest structure. A Yale University study also found a similar pattern, with FSC providing more prescriptive requirements than other systems when it came to riparian management practices.

The OSU study also pointed out that Oregon forestry laws exceeded either certification system for detail in a few areas. Because both systems require compliance with all laws, this extra detail will mean that landowners in states such as Oregon, Washington, and California will be held to more detailed criteria than certified landowners under the same system in states

or countries with less specific laws, creating a bit of an unequal application of the certification standard. The concept of certification should be more attractive to landowners in areas with these stricter laws, however, because it may force competitors in other regions to certify also and thus incur some of the costs of environmental laws in more regulated areas.

### **How credible is your claim? Verification process oversight**

Verification (sometimes referred to as an assessment, inspection, or audit) is the comparison of a forestry operation to the certification system's standard. In the FSC system, certifiers accredited by the FSC conduct certification assessments. FSC plays the role of systemwide police by ensuring the consistent application of its system. In the Tree Farm system, the certifying organization directly oversees certification inspections. SFI, CSA, and ISO follow well-established procedures in determining who is qualified to do certification audits and in stipulating the independent auditing process.

#### **Certification process steps**

Exact steps to become certified differ by system, but the process generally has several stages:

- Preliminary discussions or preassessment
- Field verification report
- Certification declaration
- Follow-up audits

The more complex the system, the more time each step takes. A Tree Farm verification typically is done on small acreages (less than 500 acres), so it generally takes a day or less. An ISO, FSC, or SFI verification may span hundreds of thousands or even millions of acres and may take a week or more. Some certification systems also provide for chain-of-custody and eco-labeling of wood products as a part of the verification process.

The purpose of verification is to see whether the candidate's operation conforms to the certification standards. In an ISO verification, for example, auditors attempt to determine whether the organization is successfully implementing an environmental management system with self-set performance targets. FSC, SFI, CSA, and Tree Farm verifications measure



conformance to the various performance criteria specified by their system.

At first glance it may appear certification is a yes-or-no decision, but in practice it often involves significant discussion of facts and issues. Some major issues prevent certification from happening (thus constituting a fatal flaw), while minor issues result in changes that must be made during the certification period. For example, a certification may be awarded on the condition that the landowner adopts a new practice, such as designated skid trails during harvest operations. The idea is to identify where an operation may fall short of the standard and to ensure that steps are taken to gain conformance as a condition of gaining and holding certified status.

## **f**orest certification in perspective

Certification offers certain opportunities—and currently faces several limitations.

A landowner looking at one or more systems should consider both sides of the equation.

### **Opportunities**

**Image** Certification can serve to enhance how ENGOs and the public view a landowner's management activities or a company's business practices.

**Credibility** Certification can add credibility to environmental claims.

**Risk reduction** Related to image and credibility, certification can reduce risks of environmental noncompliance. This aspect is especially attractive to boards of directors, shareholders, regulators, analysts, bankers, etc.

**Premiums** Certified products at any stage of the value chain can potentially obtain price premiums from buyers. Anecdotal evidence suggests that when premiums are obtained, they typically are short lived.

**Market access** Certification can maintain or create access to markets that favor

certified products; for example, to LEED-standard buildings (see page 9) and certain retailers. For forest landowners, it also can ensure market access to mills in their area that participate in a particular certification program.

**Market share** Related to market access, certification may help in gaining share in specific markets.

**Improved decision making and profitability** Some view the certification process as only a cost for the landowner, but there is evidence to the contrary. Inspections by outside parties provide a fresh perspective and can reveal opportunities for cost savings and needed organizational changes. In addition, the extra record keeping required for certification may provide managers with more and better information for decision making. One certified forest company has reported a \$1 million cost savings in its manufacturing processes because of new programs initiated through the certification process.

### **Limitations**

**Limited demand** At this point, the certified-products market is a small, but growing, part of the overall wood products market.

**Chain of custody** To reap the returns of potential premiums or market access, chain of custody must be maintained from the forest to the customer. This can be challenging. Each system has developed rules to facilitate use of mixed raw-material sources as well as to avoid illegal or controversial sources.

Verification (also called assessment, inspection, or audit)

*Comparison of the landowner's forest management practices, plans, and other documentation against a certification system's standards.*

*A key quality of verification is its relative independence from the landowner.*

*Verifications conducted by the landowner or by a customer or trade association generally are not recognized as true certification.*

*True certification requires verification by an independent third party.*

**Changing standards** As certification systems evolve and change, the general pattern has been for more prescriptive standards, which reduce flexibility for auditors, forest managers, and landowners.

**Confusion** Various groups have a vested interest in the different certification systems. This creates both a political and competitive atmosphere among the systems and results in conflicts and claims among supporters of various systems.

## Costs

Direct costs of certification vary widely. An FSC or SFI field assessment might cost less than 10¢ an acre for large landowners. The owner of a small parcel (10–40 acres) will find, however, that the minimum cost to certify his or her individual property under FSC might be well over \$5,000. Normally, these properties are certified under resource manager or group certifications (see below), and the cost to each landowner may be only a few hundred dollars. Tree Farm inspections currently are free to the landowner. Overall, the more detailed the system, the more certification will cost; and the larger the land area, the lower the cost on a per-acre basis.

To make certification economically accessible to the more than 9 million family forest owners in the United States, many certification systems allow for certification of a group of small owners. By grouping several small owners together in one assessment, costs are greatly reduced and the procedure simplified. In the case of FSC, this commonly is done when a consulting forester goes through an assessment to become a certified resource manager. There are also examples of NGOs, co-ops, and landowner associations administering group FSC certifications. The assessment team inspects a sample of the lands under management by the resource manager, much the same way that a sample of lands is inspected for large owners during an assessment. Once certified status is granted, all qualified lands under management by this consultant are certified, without having to do an audit of each one. For the Tree

Farm program, group certification often comes through an established group such as a landowner association or an industrial landowner assistance program. PEFC uses an umbrella certification in which a standard is set for entire regions, and all land within that region can be considered certified if a sample is meeting the standard. Thus in some cases a landowner may be certified without requesting or even knowing about it. In addition to these group options, the FSC also has a special program for small private owners (SLIMF). Standards are appropriate for the small ownership scale, and certification is much cheaper than if small landowners had to meet the standard for large industrial owners.

For initial certifications, on-site inspection costs usually include time and travel expenses for one to three professionals for a 1- to 3-day field visit. Costs also include their time for pre- and postvisit activities such as reviewing plans, developing recommendations, and writing reports. The certification system might retain a portion of the fee to cover expenses such as maintaining records.

Indirect costs to establish and maintain certification can be very significant. They might include inventory or monitoring requirements and forestland set-asides for nontimber uses. Indirect costs easily can surpass direct costs of the initial verification.

Chain-of-custody certification for wood products processors and members of the distribution channel can range from several hundred to several thousand dollars, depending on the operation's size and complexity.

## U.S. certification in perspective

Costs, credibility, and benefits of certification will be evaluated quite differently depending on the type of forestland ownership. The U.S. Forest Service is now, after a long moratorium, considering how it might approach certification of federal forestlands. Millions of acres of state, county, and municipal forests have been certified under different systems. Public land managers are less interested in market opportunities associated with certification. Instead, they value the outside verification of their land management practices, which can buffer criticism from a divided public.



**Table 1. Major third-party forest and wood product certification systems of interest to North American forest owners**

General Features	American Tree Farm System (ATFS)	Forest Stewardship Council (FSC)	Sustainable Forestry Initiative (SFI)	Canadian Standards Association (CSA)	International Organization for Standardization (ISO 14001)	Programme for the Endorsement of Forest Certification schemes (PEFC)
<b>Sponsor</b>	American Forest Foundation	Forest Stewardship Council	Original – American Forest & Paper Association; current – Sustainable Forestry Board	Canadian Standards Association	International Organization for Standardization	Independent, nonprofit, nongovernmental organization
<b>Primary scope</b>	USA	Worldwide	USA and Canada	Canada	Worldwide	Worldwide
<b>Year forestry standard established</b>	1941	1993	1995	1996	1994 (not forestry specific)	1999
<b>Standard development</b>	Internal	Committees of stakeholders with public input	Sustainable Forestry Board with public input	CSA multi-interest Technical Committee including broad stakeholder involvement	Internal	Certification organizations within countries and regions that seek PEFC endorsement
<b>Eco-label</b>	No	Yes	Yes	Yes	No	Yes
<b>Chain of custody</b>	No	Yes	Yes	Yes	No	Yes
<b>Total systemwide certified acres (millions) as of December 2005</b>	35	169	130	171	NA	444 in 20 countries
<b>Websites</b>	<a href="http://www.affoundation.org/">http://www.affoundation.org/</a>	<a href="http://www.fsc.org">www.fsc.org</a> <a href="http://www.fsc.org">www.fsc.org</a>	<a href="http://www.aboutsfi.org">www.aboutsfi.org</a>	<a href="http://www.csa-international.org">http://www.csa-international.org</a>	<a href="http://www.iso.org">www.iso.org</a>	<a href="http://www.pefc.org/">http://www.pefc.org/</a>





Industrial forest products firms, Timber Investment Management Organizations (TIMOs), and Real Estate Investment Trusts (REITs) may seek a variety of benefits from certification but mainly wish to avoid environmental controversy about how they grow and manage forests. Firms are also under immense pressure from stockholders to make an adequate return on investment. If certification can enhance or protect the bottom line—through new niche markets, price premiums, greater market share, or improved public image—industrial owners will seek green certification under the system that best meets their internal needs and their customers' requirements.

Private individuals and families who own relatively small forest parcels are, collectively, the major source of wood for forest products in the United States. Unlike industrial owners, more than 80 percent of individual and family forest owners are not motivated to produce only timber. Instead, they manage for a variety of nontimber benefits. They do sell timber occasionally, but without log markets' clear demands for certification they find it difficult to justify much investment in certification. In addition, the relatively small size and limited growing-stock value of most small private forests may make the cost of certification prohibitive in view of potential gains. Although certification systems are addressing this via group certification (FSC & Tree Farm), umbrella certification (PEFC), and having work done by a certified logger (SFI), to date individual small owners are not flocking to sign up for these

programs, and it is unlikely they will do so in the near future. Clearly this remains a major challenge for certification in the United States.

## Certification in the near future

### Systems

Today it seems that organizations and geographic areas are entrenched in their divergent positions and are set on creating and promoting their own certification systems. But four important forces are at work that effectively change systems over time: proliferation, competition, evolution, and convergence (harmonization).

**Proliferation** Although most in the marketplace would prefer to have a single certification system and label to avoid confusing consumers, new systems continue to emerge from all over the world (e.g., Japan recently created its own system). The tremendous diversity of forest conditions and markets makes it difficult to design one system that fits well everywhere. As the market for certified products continues to develop, various groups will design new certification systems either to capitalize on market demand or to avoid being left out of the marketplace. In the short term, there will likely be more systems before the weaker ones fall aside.

**Competition** Competition is strong between FSC and other systems. FSC and SFI continue to compete actively for the U.S. market, while the FSC and PEFC compete strongly in Europe. Each system continues to adjust itself to remain competitive. PEFC recently began to expand internationally and, as of 2005, had 22 member countries (including the United States and Canada), most of which have an approved national standard. PEFC uses its "umbrella" certification process to bring together various nationally developed systems under the approved PEFC standard.

**Evolution** Competition and the need to develop the marketplace clearly have resulted in an evolution of systems over time. At first, FSC did not allow its eco-label to be used on products such as particleboard or furniture that contained both certified and noncertified materials. Marketplace realities soon changed



this, and FSC developed a policy to allow percentage-based claims. Similarly, SFI originally did not include a third-party verification option. However, as time passed, some members needed that option to validate their performance claims more objectively. Companies now can choose to have their lands independently verified for conformity with the SFI system.

Tree Farm recently adopted mandatory performance measures and now requires a written management plan for new and continuing membership. In addition, Tree Farm inspectors now must complete a formal-assessment training course before they are allowed to do inspections. In addition, Tree Farm has begun to do group certifications. Several large groups were added during the past year including a June 2005 certification in Wisconsin that included 29,000 landowners and 1.9 million acres of forest. The Wisconsin group is tied to the Wisconsin Managed Forest Law program, a public incentive program designed to promote stewardship of Wisconsin's forests.

**Convergence and harmonization** Competition in the certification marketplace is making the systems more similar over time (Table 2). As this continues, pressure from the marketplace is likely to eliminate confusion resulting from multiple eco-labels. This pressure is fostering some harmonization and recognition among the systems. For example, PEFC's recognition of CSA will allow Canadian companies to market products in Europe with a PEFC label.

The most important mutual recognition development to date for U.S. family forest owners is the mutual recognition between the SFI and Tree Farm programs, announced in July 2000. This is particularly significant because most small private owners in the United States sell their logs to SFI companies, so those landowners still can access the marketplace while avoiding the high cost of other systems. PEFC's recognition of the SFI standard, in December 2005, also might play an important role in international trade of forest products. In contrast to these developments, however, are strongly entrenched differences which have continued to separate FSC from other systems.

## Markets

The marketplace's overall acceptance is a critical factor in the future of certification. To date, consumers' purchase decisions have not significantly affected the development of certification, and none of the current evidence, anecdotal or research based, suggests that they will in the near term.

Demand for certified products in today's marketplace comes from large corporations that wish to avoid the risk of damaging their brand image. That damage can come from the company's buying products that do not have the approval of powerful ENGOs which have a history of influencing corporate behavior through protests and other elements of what they call "market mechanisms." For example, Nike made major changes in its contract shoe manufacturing due to protests about labor conditions in foreign factories producing Nike shoes. In the wood arena, The Home Depot, a national chain of home improvement stores, was heavily targeted in the late 1990s regarding its wood purchases. As a result, The Home Depot committed to new purchasing policies that included preferences for certified wood. Major competitors followed suit. ENGOs went on to similar success in the homebuilding industry, office supply retailing, financial institutions, and most recently with the catalog industry where they targeted Victoria's Secret (see ad, below).

The most important driver of demand for FSC-certified products is construction of commercial buildings to the Leadership in Energy and Environmental Design (LEED) standard. The LEED for New Construction standard is the most recognized certification for environmentally friendly commercial building practices. One point (of 69 potential points) in the LEED system can be gained by using FSC-certified wood. The LEED standard was recently reviewed and updated. Despite criticism from the AF&PA, the new standard recognizes only FSC as an acceptable forest certification system.



Green building is gaining in residential construction as well. A new LEED standard is being developed for residential construction, and the National Association of Homebuilders has a set of green building guidelines that prefer certified wood from the SFI, AFTS, CSA, FSC, and PEFC systems. Until the LEED standard changes, the U.S. industry has been promoting the Green Globe program which recognizes all the main North American forest certification systems as meeting its standard—a standard strongly criticized by leading environmental groups.

Considering all the factors in the current marketplace, there is considerable potential for growth in the demand for certified products. The United States has a significant supply of products originating from certified land; however, only a very small percentage of them carry an eco-label showing that they came from a certified forest.

From a market perspective, certification poses a dilemma: the standard cannot be so high that it renders firms uncompetitive if they adopt certification, yet the standard must be high enough to meet demands of stakeholders and customers. Moreover, as markets for certified products institutionalize, we would expect certification systems to be increasingly effective in addressing environmental problems and social issues alongside economic objectives.



## Conclusion

What might happen next with certification? Will it continue to be a growing trend in forestry? We expect growth in mutual recognition among the systems other than FSC and continued competition between FSC and others in the next few years. This competition will put pressure on systems to become more similar over time. An important unknown is the future actions of ENGOs and the companies and sectors they choose to target or other strategies they employ.

One big challenge in the United States is how to include the millions of small private landowners in certification. This issue is being addressed through group certification and other strategies but is far from resolved. Certification is an economic reality for large companies and landowners but does not yet look very attractive to small owners.

To date, certification also has been mostly a northern hemisphere reality and has not gained significant traction in tropical forests—the area of most concern to ENGOs in calling for certification in the past and today. There is some evidence that today ENGOs are more concerned about dealing directly with illegal logging in tropical forests than about ensuring certification happens immediately. One problem in the tropics has been extensive clearing for agriculture, without a connection to the forest products industry. This is not a very good situation in which to try to implement certification. Some ENGOs have taken an active role to help countries implement sustainable, forestry-based businesses in these areas rather than continue with shifting agriculture. As these businesses are established, they can be linked to certification if the costs of implementation are not too great.

Scientists are working to determine overall environmental impacts of various building products through a process called life cycle analysis. The future likely will see “life-cycle” certification that covers all aspects of a product—manufacturing, distribution, use, and disposal—rather than a single aspect of the process as in present-day forest certification.

**Table 2. Major North American forest certification programs' standards regarding six aspects of forest management**

Management aspect	FSC <sup>1</sup>	CSA <sup>2</sup>	SFI <sup>3</sup>	ATFS <sup>4</sup>
<b>Plantations</b>	Specific details limiting: 1) Representation on landscape 2) Date of establishment 3) Specific characteristics of management blocks; e.g., require diversity in tree species, genetic foundation, and stand structure	No specific policy. Plantations not defined or regulated.	No specific policy. Plantations not defined or regulated.	No specific policy. Plantations not defined or regulated.
<b>Chemicals</b>	Require minimizing use; prefer IPM <sup>5</sup> approach. Require documentation, strict monitoring, and control. Ban certain chemicals; e.g., World Health Organization (WHO) types 1a and 1b.	No specific policy beyond government regulations.	Require minimizing use given management objectives; promote IPM where feasible.	Require minimizing use; prefer IPM approach.
<b>Clearcuts</b>	Restrict size and location (varies among national and regional standards).	No specific policy beyond following government regulations.	Average of 120 acres; exceptions for forest health emergencies and natural catastrophes.	No specific policy. Conserve biodiversity and maintain habitats.
<b>Genetically modified organisms (GMOs)</b>	Prohibited.	Guided to address their use through consultation with public advisory group.	Require adherence to government regulations and international protocols. Use governed by scientifically sound methods.	No specific policy.
<b>Exotics<sup>6</sup></b>	Permitted but not promoted. Require careful monitoring to avoid adverse environmental impacts.	No specific policy beyond following government regulations.	Minimize use. Research documentation available and indicates exotics pose minimal risk.	No specific policy. Forest management places "emphasis" on "natural" plant and animal communities.
<b>Reserves</b>	Require conservation zones to protect rare, threatened, and endangered species. Representative samples of ecosystems on landscape mapped and protected. Require maintaining and enhancing attributes of High Conservation Value Forests.	Respect government-protected areas. Determine existence of underprotected ecosystems (at the landscape level) in defined forest area and ensure their protection.	Require identification and management of sites with ecological, geological, historical, or cultural significance. Manager has discretion on how best to manage these sites.	Require identification of historical, biological, archaeological, cultural, and geological sites of special interest. Manager has discretion on how best to manage these sites.

<sup>1</sup>The FSC requirements covered in this table, unless otherwise indicated, are those contained in the FSC's international Principles and Criteria, April 2004 version. These international standards apply to all FSC-accredited assessments worldwide. Additional requirements may apply in those countries and regions where FSC national and/or regional standards have been developed.

<sup>2</sup>CSA source: the 2002 Sustainable Forest Management: Requirements and Guidance Document (CAN/CSA-Z809-2002)

<sup>3</sup>SFI source: the 2005–2009 version of the SFI Standard

<sup>4</sup>ATFS source: the 2004–2008 version of the ATFS Standard

<sup>5</sup>IPM, Integrated Pest Management, is an approach to pest control that seeks to minimize chemical use through the use of alternative prevention and biological-control techniques.

<sup>6</sup>Species not endemic to the location.



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Yale Program on Forest Certification  
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### **The Sustainable Forestry Partnership**

<http://sfp.cas.psu.edu>  
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• Auburn University 334-844-1037  
• Penn State University 814-865-7932

### **Sustainable Forestry and Certification Watch**

514-273-5777  
<http://www.certificationwatch.org>

### **National Association of Homebuilders Model Green Homebuilding Guidelines**

[http://www.nahb.org/publication\\_details.aspx?sectionID=231&publicationID=1994](http://www.nahb.org/publication_details.aspx?sectionID=231&publicationID=1994)

### **U.S. Green Building Council LEED standard**

<http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>

### **Canada Green Building Council**

<http://www.cagbc.org/>

### **Green Globes**

<http://www.thegbi.org/commercial/greenglobes/index.htm>

### **Metafore (formerly the Certified Forest Products Council)**

503-224-2205  
<http://www.metafore.org>

### **Certification Canada**

<http://www.sfms.com/>

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